Featured Fishes: Selected Fishes of the California Nearshore Fishery Management Plan

...by ***Ed Roberts, Marine Biologist***

This is the second of three articles appearing in *Marine Management News.* It provides biological information and characteristics of the species selected for management under the Nearshore Fishery Management Plan (FMP), as well as an insight on the importance of each species to recreational and commercial fisheries. In this issue we focus on seven species of nearshore rockfishes included in the FMP.

(This information was compiled by Paul Reilly,Dave Osorio, Dave Ono and Colleena Perez.)

Names	Range	Keys to Identification	Maximum Age and Length	Growth and Maturity
Black-and-yellow rockfish *(Sebastes chrysomelas)* China cod, zurndicky	Eureka, CA to Isla Natividad, central Baja CA. Common north of San Diego, CA.	Nearly identical to gopher rockfish. Black or dark brown with yellow blotches.	Max. recorded age: 22 yrs. Max. recorded length: 15.25 in.	Larvae are planktonic (ocean drifters) for 1 to 2 mo.; 3 to 4 yr. olds avg. 8 in; 6 yr. olds avg. 10 in. Females first reach maturity from 3 to 6 yrs. old. while males first reach maturity at 3 to 4 yrs. old.
Calico rockfish *(Sebastes dalli)*	San Francisco, CA to Sebastian Viscaino Bay, Baja CA. Most commonly taken south of Santa Barbara, CA.	Irregular brownish bars on sides; brown or red streaks in tail.	Max. recorded age: 11 yrs. Max. recorded length:10 in.	Larvae are planktonic (ocean drifters) for less than 1 to 2 mo. Females first become mature at 9 yrs. old; males first become sexually mature at 7 yrs. old.
China rockfish *(Sebastes nebulosus*) yellowstripe rockfish	Kachemak Bay, northern Gulf of AK to Redondo Beach and San Miguel Island, CA. Most common from southeast AK to Sonoma County, CA.	Almost entirely black with yellow to yellow-white stripe running from dorsal fin to tail, and white to yellow mottling on sides.	Max. recorded age: 26 yrs. Max. recorded length: 17 in.	Larvae are planktonic (ocean drifters) for 1 to 2 mo. 6 to 7 yr. olds avg. 10 in.; 9 to 10 yr. old fish avg. 12 in. Half of all Chinas are sexually mature at 11 in.; all are mature at 12 in.
Copper rockfish *(Sebastes caurinus*) whitebelly rockfish	Northern Gulf of AK to central Baja CA. Most common from British Columbia to southern CA.	Highly variable in color. Dark brown to olive to dull yellow to olive-pink on back, belly white.	Max. recorded age off central CA: 28 years. Max. recorded length: 22.5 in.	Larvae are planktonic (ocean drifters) for 1 to 2 mo. A 2 yr. old ranges from 4 to 9 in.; a 4 yr. 8 to 13 in. Males first mature at 11 to 14 in.; females first mature at 11 to 12 in.
Gopher rockfish *(Sebastes carnatus*) rocot, rock bass	Eureka, CA to San Roque, central Baja CA. Most common from Mendocino County to Santa Monica Bay.	Nearly identical to black-and-yellow rockfish. Brown to dark brown, with pink to whitish blotches.	Max. recorded age: 24 yrs. Max. recorded length: 16.7 in.	Larvae are planktonic (ocean drifters) for 1 to 3 mo.; 3 to 4 yr. olds avg. 8 in.; 5 to 6 yr. olds avg. 10 in.; 9 to 10 yr. olds avg. 12 in.
Quillback rockfish *(Sebastes maliger)* orange-spotted rockfish, stickleback rockfish	Gulf of AK to San Miguel Island, CA. Most common from southeast AK to northern CA.	Orange-brown to black in color with pale patch between eye and pectoral fin; long dorsal spines with deeply incised membranes.	Max. recorded age: 15 years in CA, 76 years in Canada. Max. recorded length: 24 inches.	Larvae are planktonic (ocean drifters) for 1 to 2 mo. off CA, half of all males are mature at 8.7 in.; half of all females are mature at 10.2 in.
Treefish *(Sebastes serriceps*) lipstick bass	San Francisco, CA to Cedros Island, Baja CA. Most common from Santa Barbara south.	Yellowish ground color with 5 to 6 vertical black bars on the side. Reddish lower lip.	Max. recorded age: no information available. Max. recorded length: 16 in.	No information available.

Species Descriptions:

Black-and-yellow rockfish are a significant portion of the commercial catch in central California, in particular the live-fish fishery. In 1999, black-and-yellow rockfish ranked fourth in the Morro Bay area, making up 11 percent of the total catch by weight. In the Monterey Bay area, they comprised 8 percent of the commercial nearshore fishery for 1999. They are a minor component of the Commercial Passenger Fishing Vessels (CPFVs) and private vessel recreational fishery. Black-and-yellow rockfish look very similar to the gopher rockfish.

Reproduction	Predators and Prey	Habitat and Movement
Fertilization and embryo development is internal. Mating occurs between Oct. and Feb. Spawning takes place Feb. to Jul., peaking in Feb. and Mar. off of CA.	As larvae, predators include siphonophores and chaetognaths. As juveniles and adults, predators include other rockfishes, lingcod, cabezon, salmon, sharks, dolphins, porpoises, seals and marine birds. As larvae, prey includes crustacean larvae, invertebrate eggs and copepods. As juveniles and adults, prey includes small fishes, crustaceans and mollusks.	Frequently found in depths less than 60 ft., but have been taken to 120 ft., inhabiting kelp beds and rocky reefs. Young are often seen in the kelp canopy, while adults are more often associated with the bottom. Territorial. Residential (stay-at home); tag returns generally show no movement.
Fertilization and embryo development is internal. Spawning occurs off south CA in Jan. to May, with the peak in Feb.	As larvae, predators include siphonophores and chaetognaths. As juveniles and adults, predators include other rockfishes, lingcod, cabezon, salmon, dolphins and marine birds. As juveniles and adults, prey includes copepods, barnacle larvae, fish, crustaceans and cephalopods.	Inhabit depths of 24 to 840 ft., most commonly from 150 to 300 ft. Juveniles found in areas of soft sand-silt sediment, and on artificial reefs. Adults live near rocky shelf areas with soft surface interface. Little information available on movement.
Fertilization and embryo development is internal. Spawning occurs off central and north CA from Jan. to Jul., peaking in Jan.	As larvae, predators include siphonophores and chaetognaths. As juveniles and adults, predators include other rockfishes, lingcod, cabezon, salmon, sharks, dolphins, porpoises, seals and marine birds. As larvae, prey includes crustacean larvae, invertebrate eggs and copepods. As juveniles and adults, prey includes small fishes, crustaceans and mollusks.	Found to 420 ft., most commonly from 30 to 300 ft. Larger juveniles and adults occupy rocky reefs and cobble substrate. Residential (stay-at home); tag returns generally show no movement.
Fertilization and embryo development is internal. Mating occurs in the fall. Spawning occurs Jan. to Apr., with the peak in Feb.	As juveniles and adults, predators include other rockfishes, lingcod, cabezon, salmon, dolphins, porpoises, seals and marine birds. As juveniles and adults, prey includes cancer crabs, kelp crabs, shrimp, squid, octopi and fishes including other rockfishes, cusk-eels, eel-pouts and sculpins.	Has been taken from 20 to 600 ft., more commonly in less than 400 ft. Inhabits shallower water in northern portion of range; adults occupy kelp beds and rocky reefs, occurring slightly above the bottom. Residential (stay-at home); tag returns generally show little to no movement.
Fertilization and embryo development is internal. Spawning occurs Jan. to Jul., peaking in Feb., Mar., and May off CA.	As larvae, predators include siphonophores and chaetognaths. As juveniles and adults, predators include other rockfishes, lingcod, cabezon, salmon, sharks, dolphins, porpoises, seals and marine birds. As larvae, prey includes crustacean larvae, invertebrate eggs and copepods. As juveniles and adults, prey includes small fishes, crustaceans and mollusks.	Found from intertidal depths to 240 ft., most commonly from 30 to 120 ft. Adults are seen in kelp beds and rocky reefs, and also on the surrounding sandy substrate. Residential (stay-at home); tag returns generally show little to no movement.
Fertilization and embryo development is internal. Mating takes place in late winter/early spring. Spawning occurs Apr. to Jul., peaking in May and Jun.	As larvae, predators include siphonophores and chaetognaths. As juveniles and adults, predators include other rockfishes, lingcod, cabezon, salmon, dolphins, porpoises, seals and marine birds. As larvae, prey includes crustacean larvae, invertebrate eggs and copepods. As juveniles and adults, prey includes crustaceans, fish, fish eggs, mollusks and worms.	Found to 900 ft., most live in waters from 40 to 250 ft. in depth. Juveniles can be found in shallow, vegetated habitats, while adults tend to be solitary and live on deeper reefs close to the bottom. Residential (stay-at home); tag returns generally show no movement.
Fertilization and embryo development is internal. Spawning is thought to occur in late winter.	As larvae, predators include siphonophores and chaetognaths. As juveniles and adults, predators include other rockfishes, lingcod, cabezon, salmon, dolphins, porpoises, seals and marine birds. As juveniles and adults, prey includes crustaceans, fish and mollusks.	Most common from 20 to 140 ft., but have been taken to 150 ft. Juveniles are found in drifting mats of kelp, in areas of high rocky relief, and on artificial reefs. Adults are found on shallow rocky reefs, frequently in caves and crevices. Territorial. Residential (stay-at home); tag returns generally show no movement.